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Attorney's Docket No.: 18202-027US1 / 1110US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : ZHI et al.  
Serial No. : 10/589,920  
Filed : April 20, 2007  
Cust. No. : 20985  
Title : GLUCOCORTICOID RECEPTOR MODULATOR COMPOUNDS AND METHODS

Art Unit : 1614  
Examiner : Unknown  
Conf. No. : 3750

**Mail Stop PGPUB**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**TRANSMITTAL LETTER**

Dear Sir:

Transmitted herewith are a Request for Corrected Publication in Accordance with 37 C.F.R. §1.221(b) (5 pages), Hand-Annotated Sheets (6 pages), a copy of the Transmittal Letter dated 17 August 2006 (2 pages), a copy of the Declaration For Patent Application dated 20 April 2007 (18 pages), a copy of page 6 of the Preliminary Amendment dated 17 August 2006 (1 page), a copy of page 66 and 81 of the Supplemental Preliminary Amendment dated 18 June 2007 (2 pages), and a return postcard for filing in connection with the above-identified application.



The Commissioner is hereby authorized to charge any fees that may be due in connection with this paper or with this application during its entire pendency to Deposit Account No. 06-1050. A duplicate of this sheet is enclosed.

Respectfully submitted,

Stephanie Seidman  
Reg. No. 33,779

Attorney Docket No. 18202-027US1 / 1110US  
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Stephanie Seidman



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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REQUEST FOR CORRECTED PUBLICATION**

Applicant hereby requests a Corrected Publication. The above-identified application, which Published on 12/06/2007 as Publication Number US 2007-0281959 A1, contained the following errors that were created by the USPTO:

**IN THE TITLE PAGE:**

**In Item [75] Inventors:**

In the Title Page, item [75] inventors, immediately following "Lin Zhi, San Diego CA 92130 (US)" the PTO incorrectly omitted the following inventors:

Robert J. Ardecky, Encinitas, CA 92024 (US)  
Dean Phillips, San Marcos, CA 92069 (US)  
John S. Tyhonas, Chula Vista, CA 91910 (US)  
Donald Karanewsky, Escondido, CA 92029 (US)  
Robert Higuchi, Solana Beach, CA 92079 (US)  
Andrew R. Hudson, Escondido, CA 92104 (US)  
Steven L. Roach, San Diego, CA 92122 (US)  
Angie C. Vassar, San Diego, CA 92128 (US)  
Yongkai Li, San Diego, CA 92129 (US)  
Mark E. Adams, San Diego, CA 92130 (US)  
Lino J. Valdez, San Diego, CA 92122 (US)  
Catalina Cuervo, San Diego, CA 92117 (US)

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I hereby certify that this paper is being deposited with the United States Postal "Express Mail Post Office to Addressee" Service under 37 CFR §1.10 on the date indicated above and is addressed to: Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450.

Stephanie Seidman

Please insert the inventors listed above, such that item [75] now reads as "Lin Zhi, San Diego CA 92130 (US), Robert J. Ardecky, Encinitas, CA 92024 (US), Dean Phillips, San Marcos, CA 92069 (US), John S. Tyhonas, Chula Vista, CA 91910 (US), Donald Karanewsky, Escondido, CA 92029 (US), Robert Higuchi, Solana Beach, CA 92079 (US), Andrew R. Hudson, Escondido, CA 92104 (US), Steven L. Roach, San Diego, CA 92122 (US), Angie C. Vassar, San Diego, CA 92128 (US), Yongkai Li, San Diego, CA 92129 (US), Mark E. Adams, San Diego, CA 92130 (US), Lino J. Valdez, San Diego, CA 92122 (US), Catalina Cuervo, San Diego, CA 92117 (US)." This correction is supported in the Transmittal Letter of the national stage application, filed on 17 August 2006, and the Declaration For Patent Application, filed on 20 April 2007, which correctly lists the inventors for the above referenced application. Copies of the Transmittal Letter and the Declaration For Patent Application are provided as evidence.

**IN THE CLAIMS:**

**On page 125 (Claim 1):**

On page 125, column I, line 21 of the published application, in Claim 1, the PTO incorrectly omitted the recitation "R<sub>14</sub> and R<sub>15</sub> are each independently selected from among hydrogen, an optionally" immediately preceding the term "substituted alkyl". Please insert the recitation "R<sub>14</sub> and R<sub>15</sub> are each independently selected from among hydrogen, an optionally" immediately preceding the term "substituted alkyl" at page 125, Column I, line 21. This correction is supported on page 6, lines 1-5 of the Preliminary Amendment, filed on 17 August 2006, which amended the claim for clarity to recite, in relevant part:

R<sub>14</sub> and R<sub>15</sub> are each independently selected from among hydrogen, an optionally substituted alkyl, an optionally substituted alkenyl, an optionally substituted alkynyl, an optionally substituted haloalkyl, an optionally substituted aryl, an optionally substituted heteroaryl, an optionally substituted heterocyclyl, an optionally substituted cycloalkyl and an optionally substituted heteroalkyl;

A copy of page 6 of the Preliminary Amendment of 17 August 2006 is provided as evidence.

Pursuant to MPEP 1121, the patent application publication may be based upon amendments to the claims that are reflected in a complete claim listing under 37 C.F.R. § 1.121(c), provided that such amendment is submitted in sufficient time to be entered into the Office file wrapper of the application before technical preparations for publication of the application have begun, generally four months prior to the projected date of publication. The Preliminary Amendment of 17 August 2006, which was submitted to the Office

approximately 16 months prior to the publication date of 6 December 2007 for the above referenced application, provided a complete claim listing showing amendments to the claims.

**On page 126 (Claim 6):**

On page 126, column II of the published application, in Claim 6, the PTO incorrectly repeated the phrase “alkoxyalkoxyC<sub>1</sub>-C<sub>4</sub>alkyl, and hydroxyhaloC<sub>1</sub>-C<sub>4</sub>alkyl”. Please delete the second recitation of “alkoxyalkoxyC<sub>1</sub>-C<sub>4</sub>alkyl, and hydroxyhaloC<sub>1</sub>-C<sub>4</sub>alkyl” such that the claim contains a single recitation of the phrase “alkoxyalkoxyC<sub>1</sub>-C<sub>4</sub>alkyl, and hydroxyhaloC<sub>1</sub>-C<sub>4</sub>alkyl.” This correction is supported in the application as originally filed on page 280, line 20 which correctly contains a single recitation of the phrase “alkoxyalkoxyC<sub>1</sub>-C<sub>4</sub>alkyl, and hydroxyhaloC<sub>1</sub>-C<sub>4</sub>alkyl.”

**On page 128 (Claim 46):**

On page 128, column I of the published application, in Claim 46, the PTO incorrectly printed “R<sub>5</sub>” instead of “R<sub>1</sub>” in the phrase “wherein R<sub>1</sub> is”. Please replace “R<sub>5</sub>” with “R<sub>1</sub>” such that Claim 46 now contains the phrase “wherein R<sub>1</sub> is”. This correction is supported in the application as originally filed on page 285, line 6, which correctly contains “R<sub>1</sub>” instead of “R<sub>5</sub>” in the phrase “wherein R<sub>1</sub> is”.

**On page 134 (Claim 107):**

On page 134, column II of the published application, in claim 107, the PTO incorrectly printed the term “morpholine” instead of “morpholino” in the name of compound 96. Please replace the term “morpholine” with “morpholino” such that the name of compound 96 now reads as “(Z)-5-(2'-(morpholinocarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 96);”. This correction is supported on page 66, lines 1-2 of the Supplemental Preliminary Amendment, filed on 18 June 2007, which amended the claim to correct the spelling error in the name of compound 96 by replacing “morpholine” with “morpholino”. A copy of page 66 of the Supplemental Preliminary Amendment of 18 June 2007 is provided as evidence.

Pursuant to MPEP 1121, the patent application publication may be based upon amendments to the claims that are reflected in a complete claim listing under 37 C.F.R. § 1.121(c), provided that such amendment is submitted in sufficient time to be entered into the Office file wrapper of the application before technical preparations for publication of the application have begun, generally four months prior to the projected date of publication. The Supplemental Preliminary Amendment of 18 June 2007, which was submitted to the Office

approximately seven months prior to the publication date of 6 December 2007 for the above referenced application, provided a complete listing of the claims.

**On page 142 (Claim 108):**

On page 142, column I of the published application, in claim 108, the PTO incorrectly printed the term “methylidiene” instead of “methyldiene” in the name of compound 97. Please replace the term “methylidiene” with “methyldiene” such that the name of compound 97 now reads as “(Z)-5-(8'-(6'-fluoro-benzo-1',3'-dioxan-methyldiene))-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5*H*-chromeno[3,4-*f*]quinoline (compound 97);”. This correction is supported on page 81, lines 5-6 of the Supplemental Preliminary Amendment, filed on 18 June 2007, which amended the claim to correct the spelling error in the name of compound 97 by replacing “methylidiene” with “methyldiene”. A copy of page 81 of the Supplemental Preliminary Amendment of 18 June 2007 is provided as evidence.

Pursuant to MPEP 1121, the patent application publication may be based upon amendments to the claims that are reflected in a complete claim listing under 37 C.F.R. § 1.121(c), provided that such amendment is submitted in sufficient time to be entered into the Office file wrapper of the application before technical preparations for publication of the application have begun, generally four months prior to the projected date of publication. The Supplemental Preliminary Amendment of 18 June 2007, which was submitted to the Office approximately seven months prior to the publication date of 6 December 2007 for the above referenced application, provided a complete listing of the claims.

Applicant : ZHI et al.  
Serial No. : 10/589,920  
Filed : April 20, 2007

Attorney's Docket No.: 18202-027US1 / 1110US  
**Request for Corrected Publication**

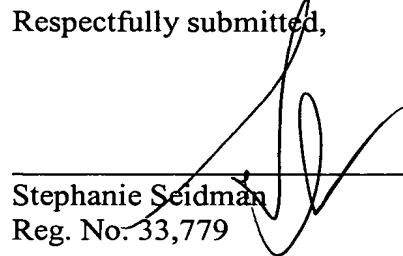
**REMARKS**

This Request for Corrected Publication seeks to correct typographical errors in the title page and claims introduced by the Patent and Trademark Office for publication.

Applicant respectfully requests issuance of a corrected publication.

It is believed no fee is due. However, if it is determined that a fee is due, the Office is hereby authorized to charge the fee to Deposit Account No. 06-1050.

Respectfully submitted,



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Stephanie Seidman  
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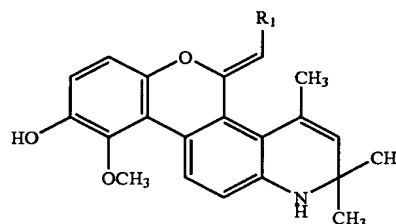
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US 20070281959A1

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2007/0281959 A1**  
(43) **Pub. Date:** **Dec. 6, 2007**(54) **GLUCOCORTICOID RECEPTOR  
MODULATOR COMPOUNDS AND  
METHODS**(75) **Inventor:** **Lin Zhi, San Diego CA 92130, CA  
(US)****Correspondence Address:**  
**FISH & RICHARDSON, PC**  
**P.O. BOX 1022**  
**MINNEAPOLIS, MN 55440-1022 (US)**(73) **Assignee:** **LIGAND PHARMACEUTICALS  
INCORPORATED, SAN DIEGO  
CALIFORNIA, CA (US)**(21) **Appl. No.:** **10/589,920**(22) **PCT Filed:** **Feb. 24, 2005**(86) **PCT No.:** **PCT/US05/06627**§ 371(c)(1),  
(2), (4) **Date:** **Apr. 20, 2007****Related U.S. Application Data**(60) **Provisional application No. 60/548,154, filed on Feb.  
25, 2004.****Publication Classification**(51) **Int. Cl.**  
**A61K 31/4741 (2006.01)**  
**C07D 491/02 (2006.01)**(52) **U.S. Cl. .... 514/285; 546/62**(57) **ABSTRACT**

Disclosed herein are compounds of Formula I:



(I)

and pharmaceutically acceptable salts, esters, amides, and prodrugs thereof. Certain of such compounds are selective glucocorticoid receptor modulators and/or selective glucocorticoid binding agents. Also disclosed are methods of making and using such compounds, including, but not limited to, using such compounds for treating various conditions.

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Mark E. Adams, San Diego, CA 92130 (US)  
L.J. Valdez, San Diego, CA 92122 (US)  
C. Cuervo, San Diego, CA 92117 (US)

R<sub>13</sub> is selected from among hydrogen, F, Cl, Br, CN, CONR<sub>14</sub>R<sub>15</sub>, an optionally substituted alkyl, an optionally substituted alkenyl, an optionally substituted alkynyl, an optionally substituted haloalkyl, and an optionally substituted heteroalkyl; or

R<sub>11</sub> and R<sub>12</sub> together form an optionally substituted 5-6 member ring and R<sub>13</sub> is selected from among hydrogen, F, Cl, Br, CN, CONR<sub>14</sub>R<sub>15</sub>, an optionally substituted alkyl, an optionally substituted alkenyl, an optionally substituted alkynyl, an optionally substituted haloalkyl, and an optionally substituted heteroalkyl; or

R<sub>12</sub> and R<sub>13</sub> together form an optionally substituted 4-6 member ring and R<sub>11</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted alkyl, an optionally substituted alkenyl, an optionally substituted alkynyl, an optionally substituted haloalkyl, an optionally substituted heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, an optionally substituted aryl, an optionally substituted heteroaryl, an optionally substituted heterocyclyl and an optionally substituted cycloalkyl;

*R<sub>14</sub> and R<sub>15</sub> are each independently selected from among hydrogen, an optionally*

substituted alkyl, an optionally substituted alkenyl, an optionally substituted alkynyl, an optionally substituted haloalkyl, an optionally substituted aryl, an optionally substituted heteroaryl, an optionally substituted heterocyclyl, an optionally substituted cycloalkyl and an optionally substituted heteroalkyl; or

R<sub>14</sub> and R<sub>15</sub> together form an optionally substituted 4-7 member ring;

R<sub>16</sub> is selected from among hydrogen, an optionally substituted alkyl, an optionally substituted alkenyl, an optionally substituted alkynyl, an optionally substituted haloalkyl, an optionally substituted heteroalkyl, an optionally substituted aryl, an optionally substituted heteroaryl, an optionally substituted heterocyclyl and an optionally substituted cycloalkyl;

X is selected from among O, S, and NR<sub>17</sub>; and

R<sub>17</sub> is selected from among hydrogen, an optionally substituted alkyl, an optionally substituted alkenyl and an optionally substituted alkynyl;

wherein the substituents on the alkyl, alkenyl, alkynyl, aralkyl, aryl, heteroaryl, heterocyclyl, and cycloalkyl groups, when present, are each individually and independently selected from one to four group(s) selected from among: alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, non-aromatic heterocycle, hydroxy, alkoxy, alkoxyalkoxy, aryloxy, mercapto, alkylthio, arylthio, cyano, halo, carbonyl, imino, hydroxyimino, alkoxyimino, aryloxyimino, aralkoxyiminothiocarbonyl, O-carbamyl, N-carbamyl, O-thiocarbamyl, N-thiocarbamyl, C-amido, N-amido, S-sulfonamido, N-sulfonamido, C-carboxy, O-carboxy, isocyanato, thiocyanato, isothiocyanato, nitro, silyl, trihalomethanesulfonyl, heteroaryloxy, heteroaralkoxy, heterocyclyloxy, cycloalkoxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, aralkoxy, alkylcarbonyloxy, arylcarbonyloxy, aralkylcarbonyloxy, alkoxy carbonyloxy, aryloxy carbonyloxy, aralkoxy carbonyloxy, aminocarbonyloxy, alkylaminocarbonyloxy, dialkylaminocarbonyloxy, alkylarylamino carbonyloxy, diarylamino carbonyloxy and

amino; including mono- and di-substituted amino groups, and the protected derivatives of amino groups;

wherein at least one position selected from among R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> is not hydrogen;

at least one position selected from among R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, and R<sub>10</sub> is not hydrogen;

if R<sub>4</sub> is F, then at least one position selected from among R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub> and R<sub>6</sub> is not hydrogen;

if R<sub>3</sub> is F, then at least one position selected from among R<sub>2</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> is not hydrogen; and

if any two positions selected from among R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are both F, then at least one of the other three positions selected from R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> is not hydrogen.

2. The compound of claim 1, wherein R<sub>2</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, —OR<sub>16</sub>, —SR<sub>16</sub>, —SO<sub>2</sub>NR<sub>14</sub>R<sub>15</sub>, and an optionally substituted aryl;

R<sub>3</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —OR<sub>16</sub>, —SR<sub>16</sub> and an optionally substituted aryl; and

R<sub>4</sub> is selected from among hydrogen, F, Cl, Br, CN, —OR<sub>16</sub>, a ring, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; or

R<sub>2</sub> and R<sub>3</sub> together form an optionally substituted 5-6 member ring and R<sub>4</sub> is selected from among hydrogen, F, Cl, Br, CN, —OR<sub>16</sub>, a ring, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; or

R<sub>3</sub> and R<sub>4</sub> together form an optionally substituted 4-6 member ring and R<sub>2</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, —OR<sub>16</sub>, —SR<sub>16</sub>, —SO<sub>2</sub>NR<sub>14</sub>R<sub>15</sub>, and an optionally substituted aryl;

R<sub>5</sub> is selected from among hydrogen, F, Cl, Br, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, and OCH<sub>3</sub>;

R<sub>6</sub> is selected from hydrogen and F;

R<sub>7</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, and an optionally substituted aryl;

R<sub>8</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —OR<sub>16</sub>, a phenyl that is optionally substituted with hydrogen, a halogen, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; and



R<sub>9</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; or

R<sub>7</sub> and R<sub>8</sub> together form an optionally substituted 5-6 member ring and R<sub>9</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; or

R<sub>8</sub> and R<sub>9</sub> together form an optionally substituted 4-6 member ring and R<sub>7</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, and an optionally substituted aryl;

R<sub>10</sub> is selected from among hydrogen, F, Cl, CH<sub>3</sub>, and OCH<sub>3</sub>;

R<sub>11</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, and an optionally substituted aryl;

R<sub>12</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —OR<sub>16</sub>, a phenyl that is optionally substituted with hydrogen, a halogen, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; and

R<sub>13</sub> is selected from among hydrogen, F, Cl, Br, CN, CONR<sub>14</sub>R<sub>15</sub>, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; or

R<sub>11</sub> and R<sub>12</sub> together form an optionally substituted 5-6 member ring and R<sub>13</sub> is selected from among hydrogen, F, Cl, Br, CN, CONR<sub>14</sub>R<sub>15</sub>, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; or

R<sub>12</sub> and R<sub>13</sub> together form an optionally substituted 4-6 member ring and R<sub>11</sub> is selected from among hydrogen, F, Cl, Br, CN, CONR<sub>14</sub>R<sub>15</sub>, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, and an optionally substituted aryl;

R<sub>14</sub> and R<sub>15</sub> are each independently selected from among hydrogen, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, and an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl; or

R<sub>14</sub> and R<sub>15</sub> together form an optionally substituted 4-7 member ring;

R<sub>16</sub> is selected from among hydrogen, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, and an optionally substituted aryl;

X is selected from among O, S, and NR<sub>17</sub>;

R<sub>17</sub> is selected from among hydrogen and an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl; and

Wherein

at least one position selected from among R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> is not hydrogen;

at least one position selected from among R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, and R<sub>10</sub> is not hydrogen;

if R<sub>4</sub> is F, then at least one position selected from among R<sub>2</sub>, R<sub>3</sub>, R<sub>5</sub> and R<sub>6</sub> is not hydrogen;

if R<sub>3</sub> is F, then at least one position selected from among R<sub>2</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> is not hydrogen; and

if any two positions selected from among R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> are both F, then at least one of the other three positions selected from among R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> is not hydrogen.

3. The compound of claim 1, wherein R<sub>2</sub> is selected from among hydrogen, halo, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, aryl, haloalkoxy, haloalkylthio, formylaryl, hydroxyC<sub>1</sub>-C<sub>4</sub>alkyl, diC<sub>1</sub>-C<sub>4</sub>alkylaminoC<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkylcarbonyl, hydroxyiminoC<sub>1</sub>-C<sub>4</sub>alkyl, alkoxyiminoC<sub>1</sub>-C<sub>4</sub>alkyl, alkoxyalkoxyC<sub>1</sub>-C<sub>4</sub>alkyl, hydroxyhaloC<sub>2</sub>-C<sub>4</sub>alkyl, hydroxyhaloC<sub>2</sub>-C<sub>4</sub>alkenyl, C<sub>1</sub>-C<sub>4</sub>alkylcarbonyloxyC<sub>1</sub>-C<sub>4</sub>alkyl, formyl, —OR<sub>16</sub>, —SR<sub>16</sub>, —CONR<sub>14</sub>R<sub>15</sub>, —SO<sub>2</sub>NR<sub>14</sub>R<sub>15</sub>, wherein R<sub>14</sub> and R<sub>15</sub> are each independently selected from among hydrogen, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>5</sub>-C<sub>6</sub> aryl C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>3</sub>-C<sub>7</sub> cycloalkyl, or R<sub>14</sub> and R<sub>15</sub> together form an optionally substituted 4-7 member ring containing 1 or 2 heteroatoms selected from nitrogen and oxygen.

4. The compound of claim 1, wherein R<sub>2</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted C<sub>1</sub>-C<sub>4</sub> alkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> haloalkyl, an optionally substituted C<sub>1</sub>-C<sub>4</sub> heteroalkyl, —CONR<sub>14</sub>R<sub>15</sub>, —OR<sub>16</sub>, —SR<sub>16</sub>, —SO<sub>2</sub>NR<sub>14</sub>R<sub>15</sub>, and an optionally substituted aryl.

5. The compound of claim 1, wherein R<sub>2</sub> is phenyl.

6. The compound of claim 1, wherein R<sub>2</sub> is selected from among hydrogen, halo, cyano, C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>2</sub>-C<sub>4</sub> alkenyl, haloalkoxy, hydroxyC<sub>1</sub>-C<sub>4</sub>alkyl, alkoxyalkoxyC<sub>1</sub>-C<sub>4</sub>alkyl, and hydroxyhaloC<sub>1</sub>-C<sub>4</sub>alkyl, alkoxyalkoxyC<sub>1</sub>-C<sub>4</sub>alkyl, and hydroxyhaloC<sub>1</sub>-C<sub>4</sub>alkyl.

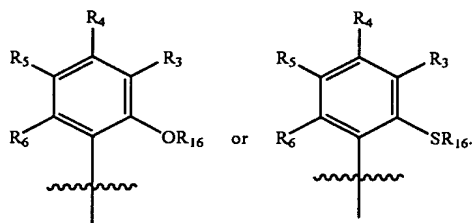
7. The compound of claim 1, wherein R<sub>2</sub> is selected from among hydrogen, fluoro, chloro, bromo, cyano, methyl, vinyl, hydroxymethyl, diethylaminomethyl, methoxymethoxymethyl, hydroxyiminomethyl, acetyloxymethyl, 1-hydroxy-2-trifluoroethyl, phenyl, trifluoromethoxy, trifluoromethylthio, acetyl, formyl, diethylaminocarbonyl, 3-formylphenyl, N-benzyl-N-methylaminocarbonyl, dimethylaminocarbonyl, 1-pyrrolidinocarbonyl, 1-morpholinocarbonyl, 4-methyl piperazi-1-nocarbonyl, piperidinocarbonyl, N-cyclohexyl-N-methylaminocarbonyl, piperidinosulfonyl, and N,N-dimethylaminosulfonyl.

8. The compound of claim 1, wherein R<sub>2</sub> is selected from among hydrogen, fluoro, chloro, cyano, methyl, hydroxymethyl, methoxymethoxymethyl, 1-hydroxy-2-trifluoroethyl, vinyl and trifluoromethoxy.

9. The compound of claim 1, wherein R<sub>3</sub> is selected from among hydrogen, halo, hydroxy, C<sub>1</sub>-C<sub>4</sub>alkoxy, C<sub>1</sub>-C<sub>4</sub>alkyl, haloC<sub>1</sub>-C<sub>4</sub>alkyl, haloalkoxy, haloC<sub>1</sub>-C<sub>4</sub>alkylthio, aryl, heteroaryl, haloaryloxy, aryloxy, haloaryloxy, alkoxyaryloxy, C<sub>1</sub>-C<sub>4</sub>alkylaryloxy, haloalkoxyaryloxy, haloaryl and hydroxyC<sub>1</sub>-C<sub>4</sub>alkyl.

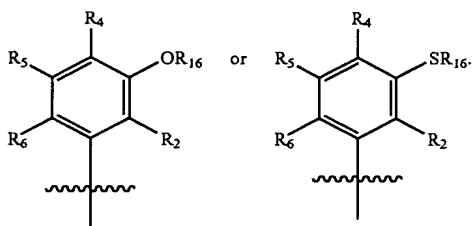
10. The compound of claim 1, wherein R<sub>3</sub> is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted

42. The compound of claim 1, wherein  $R_1$  is



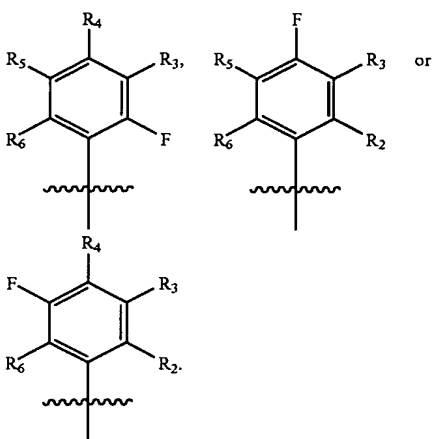
43. The compound of claim 42, wherein  $R_{16}$  is hydrogen, optionally substituted  $C_1$ - $C_4$  alkyl, halo $C_1$ - $C_4$  alkyl, optionally substituted aryl, haloaryloxy and  $C_1$ - $C_4$  alkoxy $C_1$ - $C_4$  alkyl.

44. The compound of claim 1, wherein  $R_1$  is:



45. The compound of claim 44, wherein  $R_{16}$  is hydrogen, methyl, methoxy, trifluoromethyl, 4-fluorophenyl, 4-methylbenzyl, 4,4,4-trifluorobutyl, 2-fluoroethyl, 3,3-difluoro-2,2,2-trifluoropropyl, 4-fluorobenzyl, 2-fluorobenzyl, 4-methoxyphenyl, 3,4-dichlorophenyl, 4-tolyl, 4-chlorophenyl, 3-trifluoromethoxyphenyl, and phenyl.

46. The compound of claim 1, wherein  $R_5$  is



47. The compound of claim 1, wherein  $R_7$  is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, an optionally substituted  $C_1$ - $C_4$  heteroalkyl,  $-\text{CONR}_{14}\text{R}_{15}$ , and an optionally substituted aryl.

48. The compound of claim 1, wherein  $R_7$  is an optionally substituted aryl.

49. The compound of claim 1, wherein  $R_7$  is an optionally substituted phenyl.

50. The compound of claim 49, wherein  $R_7$  is substituted with one to three substituents selected from among hydrogen, halogen,  $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  haloalkyl, and  $C_1$ - $C_4$  heteroalkyl.

51. The compound of claim 1, wherein  $R_7$  is hydrogen.

52. The compound of claim 1, wherein  $R_8$  is hydrogen.

53. (canceled)

54. The compound of claim 1, wherein  $R_9$  is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl.

55. The compound of claim 1, wherein  $R_9$  is hydrogen.

56. The compound of claim 1, wherein  $R_7$  and  $R_8$  together form an optionally substituted 5-6 member ring and  $R_9$  is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, an optionally substituted  $C_1$ - $C_4$  heteroalkyl.

57. The compound of claim 1, wherein  $R_8$  and  $R_9$  together form an optionally substituted 4-6 member ring and  $R_7$  is selected from among hydrogen, F, Cl, Br, CN, an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, an optionally substituted  $C_1$ - $C_4$  heteroalkyl,  $-\text{CONR}_{14}\text{R}_{15}$ , and an optionally substituted aryl.

58. The compound of claim 1, wherein  $R_{10}$  is selected from among hydrogen, F, Cl,  $\text{CH}_3$ , and  $\text{OCH}_3$ .

59. The compound of claim 1, wherein  $R_{10}$  is hydrogen.

60. The compound of claim 1, wherein  $R_{11}$  is selected from among hydrogen, cyano, formyl,  $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyl,  $C_2$ - $C_4$  alkynyl, hydroxy $C_1$ - $C_4$  alkyl, halo $C_1$ - $C_4$  alkyl, halo $C_2$ - $C_4$  alkenyl, hydroxy $C_1$ - $C_4$  alkyl, hydroxy $C_2$ - $C_4$  alkenyl, cyano $C_1$ - $C_4$  alkenyl, hydroxy $C_2$ - $C_4$  alkynyl, alkoxyalkoxy $C_1$ - $C_4$  alkyl, hydroxyhalo $C_1$ - $C_4$  alkyl, amino $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  alkylamino $C_1$ - $C_4$  alkyl, di $C_1$ - $C_4$  alkylamino $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  alkyl $C_2$ - $C_4$  alkenylamino $C_1$ - $C_4$  alkyl, arylamino $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenylamino $C_1$ - $C_4$  alkyl, cyclo $C_3$ - $C_6$  alkylamino $C_1$ - $C_4$  alkyl, hydroxyalkoxyalkyl, haloalkylcarbonyl, alkoxyalkoxyalkoxy, carboxyalkoxyalkyl, alkoxyhaloalkyl, alkoxyalkoxyalkoxyalkyl, hydroxy  $C_1$ - $C_4$  alkylcarbonyl, N,N-di $C_1$ - $C_4$  alkylamino $C_1$ - $C_4$  alkyl, N-cyclo $C_3$ - $C_6$  alkyl-N- $C_1$ - $C_4$  alkylaminocarbonyl, halo $C_1$ - $C_4$  alkylcarbonyl, hydroxyhalo $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  alkylcarbonyl, cyclo $C_3$ - $C_6$  alkylcarbonyl,  $C_2$ - $C_4$  alkenylcarbonyl,  $C_2$ - $C_4$  alkynylcarbonyl, heteroarylcarbonyl, hydroxyaralkyl,  $C_1$ - $C_4$  alkoxy $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyloxy $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkynyloxy $C_1$ - $C_4$  alkyl, aryloxy $C_1$ - $C_4$  alkyl, hydroxyimino $C_1$ - $C_4$  alkyl, alkoxyimino $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyloxyimino $C_1$ - $C_4$  alkyl, aryloxyimino $C_1$ - $C_4$  alkyl, aralkoxyimino $C_1$ - $C_4$  alkyl, heterocyclyl, heteroaryl and  $-\text{CONR}_{14}\text{R}_{15}$ , wherein the alkyl, alkenyl, alkynyl, cycloalkyl, heterocyclyl, heteroaryl and aryl groups can be unsubstituted or substituted with one to three substituents selected from among  $C_1$ - $C_4$  alkyl,  $C_2$ - $C_4$  alkenyl,  $C_2$ - $C_4$  alkynyl, hydroxy,  $C_1$ - $C_4$  alkoxy, nitro, halo, cyano, oxo, aryl, cycloalkyl, heterocyclyl, and heteroaryl groups.

61. The compound of claim 1, wherein  $R_{11}$  is selected from among hydroxy $C_1$ - $C_4$  alkyl, hydroxyimino $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  alkoxyimino $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  alkylcarbonyl,  $C_1$ - $C_4$  alkenyloxyimino $C_1$ - $C_4$  alkyl, aryloxyimino $C_1$ - $C_4$  alkyl, aralkoxyimino $C_1$ - $C_4$  alkyl,  $C_1$ - $C_4$  alkoxy $C_1$ -

- (Z)-5-(2'-Chloro-6'-fluoro-5'-methylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 64);
- (Z)-5-(2'-trifluoromethoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 65);
- (Z)-5-(2'-trifluoromethylthiobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 66);
- (Z)-5-(3',4'-methylenedioxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 67);
- (Z)-5-(3'-chloro-2'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 68);
- (Z)-5-(4'-(4"-methylbenzyloxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 70);
- (Z)-5-(3',5'-di-tert-butylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 71);
- (Z)-5-(3'-(2",2"-difluoroethoxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 72);
- (Z)-5-(2',5'-dimethylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 73);
- (Z)-5-(3'-(3"-thienyl)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 74);
- (Z)-5-(2'-diethylaminocarbonylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 75);
- (Z)-5-(3'-(4",4",4"-trifluorobutoxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 76);
- (Z)-5-(3'-(2",4"-difluorophenyl)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 77);
- (Z)-5-(3'-(3"-pyridyl)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 78);
- (Z)-5-(2'-(3"-formylphenyl)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 79);
- (Z)-5-(3',5'-dimethylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 80);
- (Z)-5-(3',4'-dimethylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 81);
- (Z)-5-(2'-(diethylamino)carbonyl-6'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 82);
- (Z)-5-(2'-(diethylamino)carbonyl-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 83);
- (Z)-5-(2'-(methylbenzylamino)carbonyl-6'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 84);
- (Z)-5-(2'-(dimethylamino)carbonyl-5'-bromo-benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 85);
- (Z)-5-(3'-(2"-fluoroethoxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 86);
- (Z)-5-(3'-(2",2",3",3"-tetrafluoropropoxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 87);
- (Z)-5-(3'-(4"-fluorobenzoyloxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 88);
- (Z)-5-(3'-(2"-fluorobenzoyloxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 89);
- (Z)-5-(2'-(pyrrolidinecarbonyl)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 90);
- (Z)-5-(2'-(pyrrolidinecarbonyl)-5'-bromobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 91);
- (Z)-5-(2'-(dimethylaminocarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 92);
- (Z)-5-(2'-(pyrrolidinecarbonyl)-5'-methylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 93);
- (Z)-5-(2'-(pyrrolidinecarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 94);
- (Z)-5-(3'-(4"-fluorophenoxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 95);
- (Z)-5-(2'-(~~morpholine~~ morpholinecarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 96);
- (Z)-5-(8'-(6'-fluoro-benzo-1',3'-dioxan-methylidene))-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 97);
- (Z)-5-(2'-dimethylaminocarbonyl-3'-methoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 98);
- (Z)-5-(2'-(4"-methylpiperazinecarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 99);

- (Z)-5-(2'-(pyrrolidinecarbonyl)-5'-bromobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 91);
- (Z)-5-(2'-(dimethylaminocarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 92);
- (Z)-5-(2'-(pyrrolidinecarbonyl)-5'-methylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 93);
- (Z)-5-(2'-(pyrrolidinecarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 94);
- (Z)-5-(3'-(4"-fluorophenoxy)benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 95);
- (Z)-5-(2'-(morpholinocarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 96);
- (Z)-5-(8'-(6'-fluoro-benzo-1',3'-dioxan-methylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 97);
- (Z)-5-(2'-dimethylaminocarbonyl-3'-methoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 98);
- (Z)-5-(2'-(4"-methylpiperazinecarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 99);
- (Z)-5-(2'-methyl-3'-phenylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 100);
- (Z)-5-(3',5'-di-methoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 101);
- (Z)-5-(2'-(piperidinecarbonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 102);
- (Z)-5-(2'-dimethylaminosulphonyl-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 103);
- (Z)-5-(3'-phenoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 104);
- (Z)-5-(2'-(ethylmethylamino)carbonyl-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 105);
- (Z)-5-(2'-(cyclohexylmethylamino)carbonyl-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 106);
- (Z)-5-(2'-cyanobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 107);
- (Z)-5-(2',3',5',6'-tetrafluoro-4'-methoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 108);
- (Z)-5-(3'-hydroxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 109);
- (Z)-5-(2'-(piperidinesulphonyl)-4'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 110);
- (Z)-5-(1'-naphthylmethylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 111);
- (Z)-5-(3'-methyl-4'-methoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 112);
- (Z)-5-(2',5'-dimethoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 113);
- (Z)-5-(2',3'-methylenedioxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 114);
- (Z)-5-(2',3'-ethylenedioxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 115);
- (Z)-5-(4'-hydroxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 116);
- (Z)-5-(2'-cyano-3'-methylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 117);
- (Z)-5-(3'-chloro-2'-cyanobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 118);
- (Z)-5-(5'-bromo-2'-cyano-benzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 119);
- (Z)-5-(8'-(6'-chloro-benzo-1',3'-dioxan-methylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 120);
- (Z)-5-(2'-chloro-3',4'-dimethoxybenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 121);
- (Z)-5-(2'-cyano-3'-fluorobenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 122);
- (Z)-5-(8'-(6'-methyl-benzo-1',3'-dioxan-methylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 123);
- (Z)-5-(2'-cyano-5'-methylbenzylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 124);
- (Z)-5-(8'-(5',6'-difluoro-benzo-1',3'-dioxan-methylidene)-1,2-dihydro-9-hydroxy-10-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 125);